REMARKS

In accordance with the above amendments, claims 187-188, 197-198 and 206-207 have been canceled and claims 183-186, 189-196, 199-205 and 208-211 have been amended. New claims 212-257 have been added. Claims 183-186, 189-196, 199-205 and 208-257 remain under consideration in the present application. No claim has been allowed.

Claim Rejections - 35 USC § 112 - first paragraph

It is noted that claims 183-211 have been rejected under 35 USC § 112, first paragraph, as failing to comply with the enablement requirement. It is believed that the rejection appears to be based on the following reasoning categories:

(a) the claims relate to any non-human transgenic animal but the specification teaches only the mouse;

(b) an alleged lack of enabling disclosure due to unpredictability of phenotype generated;

(c) the patent specification does not show that transgenic progeny contain the transgene.

This rejection is respectfully traversed. The claims have been amended and are now restricted to non-human transgenic mammals. The basis for this amendment is found throughout the earlier claims and the original specification. Thus, the claims now exclude all other vertibrates such as birds, reptiles, amphibians and others.

The Examiner's concerns will next be addressed in order.

(a) We acknowledge that the examples are given only in the mouse, but it is generally agreed that most mammals have similar physiology and anatomy and so it is entirely credible and expected that exemplification in the mouse provides adequate guidance to the skilled person to realize the invention in other mammals.

In fact, most biomedical technology is learned in the mouse and then applied to other mammals. Many technologies are readily and widely applied to different mammalian species, once established in the mouse, without undue burden. For example: *in vitro* fertilization (mice, rats, pigs, monkeys, humans); cloning (mice, sheep, pigs, monkeys); magnetic resonance imaging (MRI) (mice, rats, monkeys, humans), as well as numerous biochemical assays such as hormone levels, red blood cell levels, blood and urinary biochemical tests.

The examiner has provided no evidence that the teachings of the patent application cannot be used in other mammalian species, and for all the reasons given above, the overwhelming expectation of the skilled person is that it would work.

(b) While it may be true that in some isolated cases transgenes that have been integrated into the genome, either by conventional microinjection of a DNA construct into the nucleus of a fertilized egg or by integration of a DNA construct via a retroviral agent, had unexpected expression patterns, the vast majority of transgenes are expressed in a predictable way. The expression of the transgene is dependent on the promoter sequences that are generally placed 5 to the gene. These promoter sequences are often isolated from the endogenous gene, or if ectopic or ubiquitous expression is needed, the promoters are isolated from other genes.

Typically, the promoter sequences are tested *in vitro* prior to using them for transgenesis, and transgenes are expressed in predictable ways. There are numerous examples of this in the literature.

(c) Using the teachings of the present application, Carol Readhead, one of the inventors in the present application, has confirmed that transgenic mouse progeny can be generated from male mice that have transduced sperm by infection of the male germ cells *in vivo* and subsequent natural mating. In addition, there is evidence of viral integration into the genome of the

transgenic offspring using LAM-PCR.

This can be confirmed in a Declaration by the inventor, if necessary.

Thus, the methods described in the patent can be used to make the transgenic mammals claimed.

We also note that the parent patent (US 6,316,692 B1) has been found enabled with claims relating to an *in vivo* method of incorporating a polynucleotide into germ cells of a male non-human mammal.

It is believed this overcomes the rejection under 35 USC § 112, second paragraph, and the Examiner is respectfully requested to reconsider and withdraw this rejection.

Claim Rejections - 35 USC § 112 - second paragraph

All of the claims (183-211) have been rejected under 35 USC § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicants regard as the invention, it being unclear as to whether the vector sequence or sequence encoding gene product is xenogeneic. This rejection is respectfully traversed.

In this regard, the claims have been amended to clarify that the xenogeneic polynucleotide is xenogeneic to both the vector and the host. It is believed this overcomes the rejection under 35 USC § 112, second paragraph, and the Examiner is respectfully requested to reconsider and withdraw this rejection.

Claim Rejections - 35 USC § 102

All the claims that have been rejected under 35 USC § 102(b) as being anticipated by Jolicoeur et al (USPN 5,574,206 dated 11/12/1996). This rejection is respectfully traversed.

Applicants believe that the clarifying amendments to the claims to indicate that the xenogeneic polynucleotide is xenogeneic to both the vector and the host makes the claims clearly novel over Jolicoeur et al. Note, with respect to Jolicoeur, that there is no "lentiviral vector comprising at least one xenogeneic polynucleotide" since HIV is not being used as a vector. Reconsideration and withdrawal of this rejection is respectfully requested.

Claims 183-184, 187, 189, 190-194, 197, 199-203 and 206-211 have been rejected under 35 USC § 102(b) as being anticipated by Jordan et al (Journal of Virology, 1995, 69(11), 7328-7333). This rejection is respectfully traversed. As in the case of Jolicoeur, it is believed that the clarifying amendments to the claims clearly make them novel over Jordan et al. Note that in Jordan et al, the FIV is not acting as a vector and does not carry any xenogeneic polynucleotide. Reconsideration and withdrawal of this rejection is also respectfully requested.

It is believed that adequate support exists throughout the specification for the new claims 212-257 added by this amendment.

These claims are of a scope that were allowed in related application serial no. 09/191,920, now U.S. Patent No. 6,316,692, of which this application is a divisional application.

In view of the present amendments and explanatory remarks, it is believed that the present claims are enabled and clear and that they distinguish over all of the references of record. Accordingly, the Examiner is respectfully requested to reconsider and withdraw the present rejections and allow the claims.

Respectfully submitted,

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CERTIFICATE OF FACSIMILE TRANSMISSION

I hereby certify that the foregoing Amendment in response to the Office Action of March 1, 2007, a Petition for a three-month extension of time, and a Transmittal Letter in application Serial No. 10/054,365, filed on November 12, 2001, of Carol W. Readhead et al, entitled "TRANSFECTION, STORAGE AND TRANSFER OF MALE GERM CELLS FOR GENERATION OF TRANSGENIC SPECIES & GENETIC THERAPIES" are being sent by facsimile transmission to: The Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on August 30, 2007.

Linda J. Rice
on behalf of C. G. Mersereau
Attorney for Applicant

Date of Signature: August 31, 2007